

## Odonata (Paraneuroptera) from Peru and Colombia.

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## I. AESHNIDAE.

The present note is the first of a series in which it is proposed to deal with a large collection of Odonata made in Peru and Colombia. The papers will appear in any order in which the material becomes fully worked out.

The splendid Odonata fauna of Central and South America has, of course, been the subject of a number of important memoirs during the present century of which Dr. Calvert's monumental work (1901-08) in the *Biologia Centrali Americana* series may be said to be the pioneer. A subsequent contribution by that author (1909) and a large paper by the late Dr. F. Ris (1918) have added much new and important information. More recently the late Mr. E. B. Williamson and his co-workers have published a series of very important and well written papers dealing with the region. In all of these, however, the Peruvian fauna is the least adequately treated though Ris (1918) contains a number of records from this country. As some of the species in my collection have not been recorded from Peru and as some of them are of more than ordinary interest it is hoped that a preliminary faunal list will prove useful.

Ris (1918) has dealt with a considerable number of Colombian species and gives a list of those then known to occur. My own material from Colombia is not very extensive but is derived from more southerly localities than that of Ris and contains several interesting additions to his list.

The material was collected—(1) Peru: Iquitos and Mishuyacu near Iquitos. (2) S. Antonio, Yumbatos and Balsapuerto in the Huallaga region of North Peru on or near the Rio Huallaga. (3) Colombia: Umbria and Florida in S.E. Colombia in the neighbourhood of the Upper Putumayo River.

All these localities are on the Atlantic watershed and the material studied may therefore be regarded as derived from the head-waters of the Amazon and offers useful data for comparison with the better known lower Amazon fauna.

The present notes relate to the *Aeshnidae*, the first family of which my material is fully worked out.

*Aeshnidae.*1. *Coryphaeschna adnexa*, (Hagen) 1861.

Calvert, (1901-08) : 188 (*Aeshna*). [Mexico, Honduras, Colombia, Ecuador, Brazil, West Indies.]—Martin (1908-09) : 75-76 (*Aeschna*). [Mexico, Honduras, Ecuador, Amazons, Brazil, Cuba, Haiti.]—Ris (1918) : 170. [Mexico, Panama, Brazil.]

PERU: Mishuyacu. 1 ♂, 30.xii.30; 1 ♂, 20.iv.31.

Both specimens are much discoloured. A widely distributed species but apparently never taken in numbers. This appears to be the first record of specimens from Peru.

2. *Triacanthagyna ditzleri*, Williamson, 1923.

Williamson (E. B.) (1923) : 19-21. [Guatemala, Colombia, Venezuela, British Guiana, Dutch Guiana, Brazil.]

PERU: Mishuyacu. 1 ♂, 28.xii.30.

My single exponent of this interesting species is not in good condition but Mr. K. J. Morton inclines to the view that it is *T. ditzleri* with which I agree after a careful examination. Appears to be hitherto unrecorded from Peru.

Length of abd. (excl. apps.) 40mm., hindwing 35mm.

3. *Triacanthayna satyrus*, Martin, 1909.

Martin (1908-10) : 177-178 (in part)—Williamson (E.B.) (1923) : 25-26. [Costa Rica, Venezuela, British Guiana.]

PERU : Mishuyacu. 1 ♂, 13.xi.30; 1 ♂, 14.iii.31; Iquitos. 1 ♂, 8.vi.31.

Williamson points out that Martin mixed *T. septima* and *T. trifida* in his series of this species and in examining the type material cites the true *satyrus*, from Peru and Brazil. Besides Martin's specimens Williamson had only 3 ♂♂ and a doubtful ♀ before him when writing (1923).

The second and third of my specimens are very advanced and the wings are throughout suffused with brown. All three have the same measurements. Abd. 42mm., hindwing 42mm.

4. *Gynacantha tennis*, Martin, 1909.

Martin (1908-09) : 175-176 (in part?). [Amazons, Peru, Surinam.]—Williamson (E.B.) (1923) : 28-30. [Colombia, Peru, Venezuela, Fr. Guiana.]

PERU : Mishuyacu 1 ♂ 1 ♀, 8.viii.30; 1 ♂, 21.v.31—Yumbatos. 1 ♂, ix.32.

Originally described by Martin from 2 ♂♂ and 3 ♀♀ in de Séllys' collection which Williamson suggests represents more than one species.

The female above recorded is probably correctly allocated to this species.

5. *Gynacantha auricularis*, Martin, 1909.

Martin (1908-09) : 176-177. [Surinam]—Williamson (E.B.) (1923) : 34-36. [Costa Rica, Venezuela, British Guiana, French Guiana, Brazil.]

PERU : Mishuyacu. 1 ♂, 28.ii.31.

Not, I believe, previously recorded from Peru. Closely allied to the next, *G. klagesi*, which is a smaller and more slender species.

6. *Gynacantha klagesi*, Williamson, 1923.

Williamson (E.B.) (1923) : 36-37. [French Guiana.]

PERU : Mishuyacu. 1 ♂, 10.vii.30; 2 ♂♂, 20.vii.30; 1 ♂, 22.vii.30; 1 ♀, 25.vii.30; 1 ♂, 27.vii.30; 1 ♂, 8.viii.30; 1 ♂, 2.iii.31; 1 ♂, 8.iii.31; 1 ♂, 8.iv.31; 1 ♂, 24.iv.31; 1 ♂, 10.v.31; 1 ♂, 14.v.31; 2 ♂♂, 28.v.31; 1 ♀, 2.vi.31. Iquitos 1 ♂, 17.v.31.

An interesting series of this little known species hitherto recorded from French Guiana and based on 2 ♂♂ 1 ♀.

Length abd. ♂, 46-47mm. ♀, 50-51mm. Hindwing ♂, 47-48mm. ♀, 51-52mm.

7. *Gynacantha nervosa*, (Rambur) 1842.

Calvert (1901-08) : 193. [Southern U.S., Mexico, Guatemala, Costa Rica, Panama, Colombia, Venezuela, Guiana, Brazil, Bolivia, W. Indies.]—Martin (1908-09) : 169-170. [South America, Cuba, Porto Rico.]—Williamson (E.B.) (1923) : 40-43. [California, Florida, Guatemala, Costa Rica, Canal zone, Colombia, Ecuador, Bolivia,

Venezuela, British Guiana, Dutch Guiana, French Guiana, Brazil, Trinidad, Cuba, Hayti, Jamaica.]

PERU: Mishuyacu. 1 ♂, 25.vi.30; 1 ♂, 20.vii.30; 1 ♂, 25.vii.30; 1 ♂, 29.vii.30; 7 ♂♂, 1.viii.30; 2 ♂♂ 1 ♀, 5.viii.30; 1 ♂ 1 ♀, 6.viii.30; 2 ♂♂, 7.viii.30; 1 ♂ 1 ♀, 8.viii.30; 1 ♂ 1 ♀, 15.viii.30; 1 ♂, 20.viii.30; 3 ♂♂, 28.viii.30; 1 ♀, 30.viii.30; 1 ♂, 2.ix.30; 1 ♂, 6.ix.30; 1 ♂, 20.ix.30; 4 ♂♂, 27.ix.30; 1 ♂, 28.v.31.

This is the most abundant Aeschnid in the material before me yet it appears to be hitherto unrecorded from Peru. As indicated by the records above it is a very widely distributed species from the Southern States to Brazil. It will be noticed that almost all my specimens were taken in July, August and September, the largest number being captured in August.

8. *Gynacantha litoralis*, Williamson, 1923 ?

Williamson (E. B.) (1923) : 44. [Dutch Guiana and Brazil ?]

PERU: Mishuyacu. 1 ♀, 27.ix.30—Yumbatos 1 ♀, xi.32.

I am doubtful of this determination as Williamson gives hardly any characters for the ♀ of his species. These examples appear to be very close to *G. nervosa*, indeed it was to this species that I originally referred them, but they differ in having the 3rd segment of the abdomen slightly constricted, with the lateral carinae distinctly approaching the ventral carinae at the level of the transverse carina. This character brings the specimens to *litoralis* in Williamson's key. The details given there were drawn from one of the aberrant specimens which Williamson doubtfully refers to this species. My examples agree with his in having two rows of cells between  $M_2$  and Rs adjacent to the fork of Rs, as would specimens of *nervosa*. Williamson describes the wings of his Brazilian examples as uniformly brown tinged whilst mine have the subcostal space somewhat darkened basad with the costal and to a less extent the subcostal space brownish distad from the nodus. The constricted segment 3 precludes *croceipennis* which has been recorded from Peru and were it not for this character I would refer my specimens to *nervosa*.

Length of abd. ♀ 53-54mm. Hindwings ♀ 54mm.

9. *Gynacantha gracilis* (Burmeister), 1839.

Martin (1908-09) : 167-168 [S. America]—Williamson (E.B.) (1923) : 47-48. [Costa Rica, Ecuador, Bolivia, Venezuela, British Guiana, Dutch Guiana, Brazil.]

PERU: Iquitos, 1 ♀, 8.vi.31—Mishuyacu, 1 ♂, 6.viii.30; 1 ♂, 8.x.30; 1 ♂, 27.v.31.

These appear to be the first Peruvian records.

10. *Gynacantha membranalis*, Karsch, 1891.

Calvert (1901-08) : 194-195. [Panama, Colombia, Venezuela, Guiana, Ecuador, Peru, Brazil.—[Martin (1908-09) : 168-169. [Panama to the Amazons.]—Ris (1918) : 155. [Colombia, Ecuador, Venezuela, Brazil.]—Williamson (E.B.) (1923) : 48-50 [Costa Rica, Panama, Colombia, Bolivia, Peru, Venezuela, British Guiana, French Guiana, Brazil.]

COLOMBIA: Umbria, 1 ♂ 1 ♀, 1.xi.30; 1 ♂, 9.xi.30; 1 ♂, 11.xi.30; 1 ♂, 4.xii.30; 1 ♂, 14.xii.30; 1 ♂, 18.xii.30; 1 ♂, 31.xii.30; 3 ♂, 6.i.31; 2 ♂, 16.i.31.

PERU: Mishuyacu, 1 ♂, 10.iii.31; 1 ♂, 8.iv.31; 1 ♂, 14.v.31.

The following other *Gynacanthas* are recorded from Peru but are unrepresented in my material.

*G. adela*, Martin, 1909, *G. croceipennis*, Martin, 1909, and *G. interioris*, Williamson, 1923.

11. *Neuraeschna producta*, Kimmins, 1933.

Kimmins (1933): 226 [Peru].

PERU: Mishuyacu. 1 ♂, 22.viii.30; 1 ♂, 25.ix.30; 1 ♂, 8.x.30 (paratypes) 1 ♂, 20.ix.30; 1 ♂, 14.iv.31.

I had separated this interesting species as new when I heard from Mr. Kimmins that he was about to describe it from material from the same source as my own. I therefore sent him what material I had available which he incorporated in the paper above referred to. It is evidently closely allied to *N. harpya*, but is at once separated by the longer inferior anal appendage. The remarks of Williamson (1930) when describing his *N. miua* are of interest with regard to the habits of the genus, and his statement that all the known species are beautifully distinct in the form of the ♂ appendages, still holds good. Williamson says "very probably hardly a beginning has been made of our knowledge of the species of *Neuraeschna*."

12. *Stenrophlebia reticulata*, Burmeister, 1839.

Calvert (1901-08) 178-9 [Honduras, Nicaragua, Panama, Venezuela, Guiana, Surinam, Brazil.]—Martin (1908-09): 210-211 [S. America]—Ris (1918): 156 [Panama, Ecuador, Guiana, Brazil, Argentine.]

COLOMBIA: Umbria. 2 ♂ ♂, 9.xi.30; 1 ♀, 19.xi.30; 1 ♂, 28.xi.30; 2 ♂ ♂, 27.xii.30; 1 ♂, 6.i.31; 1 ♂, 10.i.31.

PERU: Mishuyacu. 1 ♂, 18.viii.30; 2 ♂ ♂, 30.viii.30; 1 ♂, 5.xi.30; 1 ♂, 24.xi.30; 2 ♂ ♂, 29.ix.30; 5 ♂ ♂, 8.x.30; 1 ♂, 24.x.30; 2 ♂ ♂, 13.xi.30; 1 ♂, 28.xi.30; 1 ♂, 10.xii.30.

Yumbatos. 1 ♂, ix.32.

I cannot find this widely distributed, powerful dragonfly recorded from either Colombia or Peru.

13. *Stenrophlebia gigantula*, Martin, 1909.

Martin (1908-09): 211. [S. America, particularly the Amazon region.]

PERU: Mishuyacu. 1 ♂, 20.viii.30; 1 ♂, 8.x.30; 3 ♂ ♂, 21.x.30; 1 ♂, 24.x.30; 1 ♂, 13.xi.30; 1 ♂, 6.xii.30; 1 ♂, 27.i.31; 1 ♂, 10.ii.31; 1 ♂, 14.ii.31.

These specimens constitute the first definite Peruvian record I am able to find. The species is closely allied to the preceding but is readily distinguished on sight by its smaller size.

Besides the above 13 species and the 3 additional *Gynacantha* mentioned, the 6 species under mentioned appear in the literature I have at hand as occurring in Peru.

*Aeshna pervalta*, Ris (1918); *vigintipunctata*, Ris (1918); *diffinis*, Ramb. (1842); *brevifrons*, Hagen (1861); *intricata*, Martin (1909), and *Rhionaeschna marita*, Först. (1909).

In conclusion I should like to express my thanks to Mr. K. J. Morton for valuable assistance in naming several of the species herein included.

*Literature referred to :*

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## The Cottian Alps and Turin in June-July, 1933.

By REV. E. B. ASHBY, F.R.E.S., F.Z.S.

I left London the night of June 18th and arrived at Oulx the following night at 9.16 p.m. Snow was falling in the Alps of Savoie and in the Mt. Cenis district en route and I experienced very cold weather in the Oulx district until 27th June, when the weather became fine and continued so for the remainder of the three and a half weeks I was there. I stayed all the time at the Albergo Commercio, an inn immediately by Oulx station. The motor-buses for the mountain resorts start by the station entrance.

I wish at the outset to express my thanks to Dr. Verity for the very interesting series of articles he has written, from time to time, in the pages of this magazine on the "Zygaenae, Grypocera and Rhopalocera of the Cottian Alps compared with other races," I have found these articles of immense interest, they represent an enormous amount of research, and they make our collections of infinitely greater interest.

### 1. STUPINIGI WOOD, TURIN. 800 ft.

I visited this old haunt of mine on June 20th and 26th. As a result of the two visits I took the following insects.

RHOPALOCERA.—*Brenthis dia*; *Argynnis cydippe*, var. *cleodoxa*, a few with the typical form; *A. aglaja*; *Strymon ilicis* var. *aesculi*, O., fresh; *S. w-album*, abundant, but rather worn; *Melitaea pseudathalia* race *celaduzza*, Fruh. with transitions to *melathalia*, Rocci.; *Plebeius argus* = *argyrognomon*, Berg., mostly worn; *Polygonia c-album*, abundant; *Melanargia galathea*, race *pedemontii*, Vty., abundant and